ABSTRACT OF THE DISCLOSURE

Several MEMS-based methods and architectures which utilize vibrating micromechanical resonators in circuits to implement filtering, mixing, frequency reference and amplifying functions are provided. A method and subsystem are provided for processing RF signals utilizing a plurality of vibrating micromechanical devices typically in the form of an IF mixer-filter and an RF channel selector or an image-reject RF filter. One of the primary benefits of the use of such architectures is a savings in power consumption by trading power for high selectivity (*i.e.*, high Q). Also, such methods and circuits can eliminate the need for a low noise amplifier in a receiver or transceiver subsystem. Consequently, the present invention relies on the use of a large number of micromechanical links in SSI networks to implement signal processing functions with basically zero DC power consumption.